

U.S. Patent Application No. 08/575,433
Attorney Docket No. RIC-95-042

a terminating gateway computer that accepts out of band signaling and converts said digital data packets into terminating signals,

a terminating circuit-switched network for providing voice output in response to said terminating signals, and

a packet-switched network for transmitting said digital data packets from said originating gateway computer to said terminating gateway computer, at least one of said originating and terminating gateway computers comprising a component for routing said digital data packets through said packet-switched network from said originating gateway computer to said terminating gateway computer;

wherein said terminating circuit-switched network is capable of providing first return signals to said terminating gateway computer in response to return voice input,

wherein said terminating gateway computer comprises a component for converting said first return signals into return packets of return digital data,

wherein at least one of said originating and terminating gateway computers comprises a component for routing said return packets through said packet-switched network from said terminating gateway computer to said originating gateway computer,

and wherein said originating gateway computer comprises a component for converting said return packets into second return signals.

11. (Three Times Amended) A telecommunications system comprising:

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an originating gateway computer for providing digital packets corresponding to originating signals produced in response to voice input, a gateway computer that accepts out of band signaling and converts said digital packets into terminating signals, a circuit-switched network for providing voice output in response to said terminating signals, and a packet-switched network for transmitting said digital packets from said originating gateway computer to said gateway computer, at least one of said originating gateway computer and said gateway computer comprising a component for routing said digital packets through said packet-switched network from said originating gateway computer to said gateway computer; wherein said circuit-switched network is capable of providing first return signals to said gateway computer, wherein said gateway computer comprises a component for converting said first return signals into packets of return digital data, wherein at least one of said originating gateway computer and said gateway computer comprises a component for routing said return packets through said packet-switched network from said gateway computer to said originating gateway computer, and wherein said originating gateway computer comprises a component for converting said return packets into second return signals.

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22. (Four Times Amended) A telecommunications method comprising:

providing originating digital packets for transmission from an originating gateway computer, said originating digital packets corresponding to originating signals produced in response to originating voice input;

routing said originating digital packets from said originating gateway computer to a gateway computer, that accepts out of band signaling, through a packet-switched network via an originating routing component in at least one of said originating gateway computer and said gateway computer;

converting said originating digital packets into terminating signals for transmission from said gateway computer;

transmitting said terminating signals through a circuit-switched network for providing terminating voice output in response to said terminating signals;

providing first return signals to said gateway computer in response to return voice input into said circuit-switched network;

converting said return signals into return digital packets of return digital data for transmission from said gateway computer;

routing said return digital packets through said packet-switched network from said gateway computer to said originating gateway computer using said originating routing component or another routing component in said originating gateway computer or said gateway computer;

and converting said return digital packets into second return signals.

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29. (Amended) A telecommunications system comprising:

an originating circuit-switched network for providing originating signals

in response to voice input,

an originating gateway computer for converting said originating signals

into digital data packets,

a terminating gateway computer that accepts out of band signaling and
converts said digital data packets into terminating signals,

a terminating circuit-switched network for providing voice output in
response to said terminating signals, and

a packet-switched network for transmitting said digital data packets from
said originating gateway computer to said terminating gateway computer, at least one of
said originating and terminating gateway computers comprising a component for routing
said digital data packets through said packet-switched network from said originating
gateway computer to said terminating gateway computer;

wherein said terminating circuit-switched network is capable of providing
first return signals to said terminating gateway computer in response to return voice
input,

wherein said terminating gateway computer comprises a component for
converting said first return signals into return packets of return digital data,

wherein at least one of said originating and terminating gateway
computers comprises a component for routing said return packets through said packet-

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switched network from said terminating gateway computer to said originating gateway computer,

wherinc said originating gateway computer comprises a component for converting said return packets into second return signals, and

wherein at least one of said originating and terminating gateway computers comprises a time-division multiplexing bus interconnecting at least one digital trunk interface with a digital signal processor and an application-specific integrated circuit, and a system bus interconnecting said digital signal processor and said application-specific integrated circuit with a central processing unit and a random access memory.

33. (Amended) A telecommunications method according to claim 22, further comprising providing a ring back or busy tone to a telephone connected to said originating gateway computer through an originating network in response to signaling from a component of said originating gateway computer.

34. (Amended) A telecommunications method comprising:
providing originating digital packets for transmission from an originating gateway computer, said originating digital packets corresponding to originating signals produced in response to originating voice input;
routing said originating digital packets from said originating gateway computer to a gateway computer, that accepts out of band signaling, through a packet-

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switched network via an originating routing component in at least one of said originating gateway computer and said gateway computer;

converting said originating digital packets into terminating signals for transmission from said gateway computer;

transmitting said terminating signals through a circuit-switched network for providing terminating voice output in response to said terminating signals;

providing first return signals to said gateway computer in response to return voice input into said circuit-switched network;

converting said return signals into return digital packets of return digital data for transmission from said gateway computer;

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routing said return digital packets through said packet-switched network from said gateway computer to said originating gateway computer using said originating routing component or another routing component in said originating gateway computer or said gateway computer;

converting said return digital packets into second return signals;
estimating a unit charge for a call going through said gateway computer;
informing a caller providing said originating voice input about the unit charge; and

recording a payment method specified by the caller before providing said terminating voice output.

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35. (Amended) A telecommunications method according to claim 22, wherein said gateway computer is a terminating gateway computer, and wherein said method further comprises:

providing a caller's address and a callee's address to said originating gateway computer,

authorizing a call between the caller and the callee using the caller's address,

using the callee's address for said routing of the originating digital packets from the originating gateway computer to the terminating gateway computer,

causing the terminating gateway computer to dial out to the callee through said circuit switched network using the callee's address,

and causing the originating gateway computer to provide a return tone for advising the caller of a status of the call.

37. (Amended) A telecommunications method according to claim 22, wherein a caller is associated with at least one dedicated address, and wherein said method further comprises:

routing a call in accordance with a routing configuration from a telephone at said dedicated address to said originating gateway computer,

passing said originating signals, the caller's address and a destination address to the originating gateway computer in accordance with said routing configuration,

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authorizing a call by checking account information of the caller though an internal data base of the originating gateway computer,

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resolving a routing to said gateway computer using the destination address,

and causing the originating gateway computer to send a control message to the gateway computer along with said dedicated address and said destination address.

Please add new claims 38 and 39.

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38. (New) A method for establishing a call connection, the method comprising:
receiving, at a first gateway device, a destination address of a called device from a calling device over a first circuit-switched network;
transmitting, in response to receiving the destination address, a connection request from the first gateway device to a second gateway device over a packet-switched network;
connecting, via the second gateway device, to the called device through a second circuit-switched network using the destination address;
establishing a call connection between the calling device and the called device through the first circuit-switched network, the packet-switched network, and the second circuit-switched network in response to the connecting.

39. (New) The method of claim 38, further comprising: